

## Claims

- [c1] 1. A complexity management system for managing a plurality of unique input variables and available resources to produce an optimized output, said complexity management system including:
    - a first portion which selectively generates a demand schedule;
    - a second portion which monitors said unique input variables and said available resources and which generates a signal to said first portion, based upon said monitoring of said input variables and available resources, effective to cause said demand schedule to be modified dynamically in a certain manner so as to optimize said output.
  - [c2] 2. The complexity management system of Claim 1 wherein said first portion comprises at least one computer.
  - [c3] 3. The complexity management system of Claim 2 wherein said second portion comprises at least one data acquisition assembly which is communicatively coupled to said first portion.
  - [c4] 4. The complexity management system of Claim 3 wherein said at least one data acquisition assembly acquires information on said available resources, said information comprising a location and quantity of said available resources.
  - [c5] 5. The complexity management system of Claim 2 wherein said first portion further comprises a notification assembly, said notification assembly being effective to communicate said modified demand schedule to said available resources.
  - [c6] 6. The complexity management system of Claim 5 wherein said notification assembly further comprises a communications interface assembly which is effective to communicate said modified demand schedule to a supplier of said available resources.
  - [c7] 7. The complexity management system of Claim 4 wherein the data acquisition assembly further includes at least one sensor tag which is physically disposed on said available resources.

- [c8] 8. The complexity management system of Claim 7 wherein the at least one data acquisition assembly is operative to interrogate said at least one sensor tag for information.
- [c9] 9. The complexity management system of Claim 8 wherein said at least one data acquisition assembly comprises at least one radio transmitter/receiver assembly.
- [c10] 10. The complexity management system of Claim 9 wherein said at least one data acquisition assembly further comprises at least one tag reader.
- [c11] 11. A method for managing a plurality of unique input variables and available resources to produce a desired output, comprising the steps of:  
creating a demand schedule;  
monitoring said input variables and available resources; and  
dynamically modifying said demand schedule in response to said monitoring of said input variables and available resources.
- [c12] 12. The method of Claim 11 wherein said step of creating a demand schedule further comprises the steps of:  
receiving desired orders;  
grouping said desired orders in a certain priority; and  
determining said demand scheduled based on said grouping.
- [c13] 13. The method of Claim 12 wherein said step of dynamically modifying said demand schedule in response to said monitoring of said input variables and available resources further comprises the steps of:  
comparing a desired quantity described in said desired orders to said determined quantity of said available resources;  
re-grouping said desired orders in a second certain priority based on said comparison; and  
determining said modified demand schedule based on said re-grouping.
- [c14] 14. The method of Claim 13 wherein said step of dynamically modifying said demand schedule in response to said monitoring of said available resources further comprises the steps of notifying at least one resource supplier of said

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modified demand schedule.

- [c15] 15. A production optimization system for use with a production facility of the type which is adapted to create products by the use of certain materials and certain production assemblies, said production optimization system includes: a first portion which selectively generates a production schedule; a second portion which monitors said production assemblies and said materials and which generates a signal to said first portion, based upon said monitoring of said production assemblies and said materials, effective to cause said production schedule to be modified in a certain manner.
- [c16] 16. The production optimization system of Claim 15 wherein said first portion comprises at least one computer.
- [c17] 17. The production optimization system of Claim 16 wherein said second portion comprises at least one data acquisition assembly which is communicatively coupled to said first portion.
- [c18] 18. The production optimization system of Claim 17 wherein said at least one data acquisition assembly acquires information on said materials, said information comprising a location of said materials and a quantity of said materials.
- [c19] 19. The production optimization system of Claim 16 wherein said first portion further comprises a notification assembly, said notification assembly being effective to communicate said modified production schedule to said certain production assemblies.
- [c20] 20. The production optimization system of Claim 19 wherein said notification assembly further comprises a communications interface assembly which is effective to communicate said modified production schedule to a vendor of said materials.
- [c21] 21. A production optimization system for use with a production facility comprising a material inventory assembly, a material transport assembly, and a manufacturing assembly, said production optimization system comprising:

a computer system which is capable of receiving customer orders and which determines a production schedule based on said customer orders; at least one sensor tag which is physically disposed on materials and components within said production facility; at least one data acquisition assembly which interrogates said at least one sensor tag for information and which is communicatively coupled to said computer system; and a notification assembly which is communicatively coupled to said computer system, said material inventory assembly, said material transport assembly, and said manufacturing assembly.

- [c22] 22. The production optimization system of Claim 21 wherein said at least one data acquisition assembly comprises at least one radio transmitter/receiver assembly.
- [c23] 23. The production optimization system of Claim 22 wherein said at least one data acquisition assembly further comprises at least one tag reader.
- [c24] 24. The production optimization system of Claim 21 wherein said notification assembly comprises at least one display which is disposed in said manufacturing assembly.
- [c25] 25. The production optimization system of Claim 24 wherein said notification assembly creates at least one icon having a first colored portion and a second colored portion which abut on at least two but no more than three sides.
- [c26] 26. A method for producing products by the use of various materials and assemblies, said method includes the steps of:  
creating a production schedule;  
monitoring said materials and said assemblies; and  
dynamically modifying said production schedule in response to said monitoring of said materials and said assemblies.
- [c27] 27. The method of Claim 26 wherein said step of creating a production further comprises the steps of:  
receiving customer orders;

grouping said customer orders in a certain priority; and  
determining said production scheduled based on said grouping.

[c28] 28. The method of Claim 27 wherein said step of monitoring said materials and said assemblies further comprises the steps of:  
determining a location of said materials; and  
determining a quantity of said materials.

[c29] 29. The method of Claim 28 wherein said step of monitoring said materials and said assemblies further comprises the step of determining the operational status of said assemblies.

[c30] 30. The method of Claim 29 wherein said step of dynamically modifying said production schedule in response to said monitoring of said materials and said assemblies further comprises the steps of:  
comparing a desired quantity described in said customer orders to said determined quantity of said materials;  
re-grouping said customer orders in a second certain priority based on said comparison; and  
determining said modified production schedule based on said re-grouping.

[c31] 31. The method of Claim 30 wherein said step of dynamically modifying said production schedule in response to said monitoring of said materials and said assemblies further comprises the steps of:  
notifying at least one assembly employee of said modified production schedule;  
and  
notifying at least one material transport employee of said modified production schedule.

[c32] 32. The method of Claim 31 wherein said step of dynamically modifying said production schedule in response to said monitoring of said materials and said assemblies further comprises the steps of notifying at least one material supplier of said modified production schedule.

[c33] 33. The method of Claim 26 wherein said step of monitoring said materials and said assemblies comprises:

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monitoring said production schedule;  
receiving a quantity of a final product type from at  
least one manufacturing employee; and  
determining whether said quantity matches said production schedule.

- [c34] 34. The method of Claim 26 further comprising the step of selectively ordering  
at least one of said materials in response to said monitoring of said materials.